

1. Describe the practice proposed for recognition, and list its objectives. Detail how the practice is innovative and how it promotes high student achievement.

The practice proposed for recognition as a Best Practice is entitled, *Step It Up a Notch*. Students are given a city in their area to visit for a walking tour. They work together in teams to obtain information, plan their route, plan their agenda, and calculate their cost. The day of the trip, to the given city, students follow their preplanned route and agenda. While the students are on their walking tour, they answer mathematic-based question provided by the instructor.

Objectives:

- ▶ Students will use number patterns and number operations as they plan their trip.
- ▶ Students will use numerical and algebraic expressions as they determine the expenses of their trip.
- ▶ Students will utilize the internet, media center, etc. to obtain information, data and maps related to their destination.
- ▶ Students will formulate questions and employ interviewing skills to schedule and obtain information about the buses.
- ▶ Students will hypothesize about the days events, create a time chart and walking route.
- ▶ Students will gather and interpret information.
- ▶ Through planning the trip and answering the mathematical questionnaire, students will gain a better understanding and appreciation for the role mathematics plays in their life.
- ▶ Students will apply mathematical terminology.
- ▶ Students will utilize technology to gain and present information obtained.

Step It Up a Notch **promotes enthusiasm and high student achievement** because it makes a connection between mathematics and the students' own world. It is a mathematic-based adventure that assists students in learning to recognize and appreciation the role mathematics plays in the real world. *Step It Up a Notch* **is innovative** because it physically takes them out of the classroom and into the world. In this adventure they plan and execute their own trip.

2. List the specific *Core Curriculum Content Standards*, including the *Cross-Content Workplace Readiness Standards* addressed by the practice and describe how the practice addresses those standards. Provide an example to substantiate your response.

You are planning a trip for 110 students and 11 chaperons from your school to Historic Philadelphia. You will visit the following sites: Liberty Bell, Independence Hall, Elfreth's Alley, Library Hall, Bank of the United States of America, Carpenter's Hall, Franklin Court, and Betsy Ross House. Before you can begin your journey you need to do some research and answer (keyboard) the following questions:

- ☺ Explain the procedure your team went through to acquire maps and information about Historic Philadelphia. List web sites, attach pamphlets, maps etc....

Core Curriculum Content Standard

- 4.2 *All students will communicate mathematically through written, oral, symbolic, and visual forms of expression.*
- 4.4 *All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.*
- 4.5 *All students will regularly and routinely use calculators, computers, manipulatives, and other mathematical tools to enhance mathematical thinking, understanding, and power.*

- ☺ Describe the route and attach a map of the path your bus will travel to Historic Philadelphia.

Core Curriculum Content Standard

- 4.4 *All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.*
- 4.14 *All students will apply the concepts and methods of discrete mathematics to model and explore a variety of practical situations. Example: planning the shortest route in the time given*

- ☺ Explain the path your team will follow through Historic Philadelphia

Core Curriculum Content Standard

- 4.4 *All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.*

- ☺ Explain and show the algebraic equations utilized to arrive at the number of buses needed for the trip, the amount of gas utilized, and the number of miles you will be traveling. Also, attach a copy of all interviewing questions formatted.

Core Curriculum Content Standard

- 4.4 *All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.*
- 4.5 *All students will regularly and routinely use calculators, computers, manipulatives, and other mathematical tools to enhance mathematical thinking, understanding, and power.*
- 4.8 *All students will understand, select, and apply various methods of performing numerical operations.*
- 4.10 *All students will use a variety of estimation strategies and recognize situations in which estimation is appropriate. For example: You can't have 3.2 buses, you need three buses*
- 4.13 *All students will develop an understanding of algebraic concepts and processes and will use them to represent and analyze relationships among variable quantities and to solve problems.*

- ☺ Develop a time table/schedule of the places your team will visit the day of the trip and develop an actual time table the day of the trip.

Core Curriculum Content Standard

- 4.4 *All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.*
- 4.6 *All students will develop number sense and an ability to represent numbers in a variety of forms and use numbers in diverse situations*
- 4.10 *All students will use a variety of estimation strategies and recognize situations in which estimation is appropriate. For example: The distance to walk a block, what type of block: city, rural?*

- ☺ Each student completes the questionnaire package given the day of the trip with their team.

Core Curriculum Content Standard

- 4.1 *All students will develop the ability to pose and solve mathematical problems in mathematics, other disciplines, and everyday experiences.*
- 4.2 *All students will communicate mathematically through written, oral, symbolic, and visual forms of expression.*
- 4.14 *All students will apply the concepts and methods of discrete mathematics to model and explore a variety of practical situations. Example: planning the shortest route in the time given*

- ☺ After the day of the trip, prepare a presentation of your experiences. The presentation should demonstrate you likes or dislikes and what was learned through your experience. Possible presentations could be a brochure, collage, a poem, short story, technology presentation, written report.

Core Curriculum Content Standard

- 4.2 *All students will communicate mathematically through written, oral, symbolic, and visual forms of expression.*
- 4.4 *All students will develop reasoning ability and will become self-reliant, independent mathematical thinkers.*

This practice is drenched with *Cross-Content Workplace Readiness Standards*:

- 1. *All students will develop career planning and workplace readiness skills.*
- 2. *All students will use technology, information and other tools.*
- 3. *All students will use critical thinking, decision-making, and problem-solving skills.*
- 4. *All students will demonstrate self-management skills.*

Literacy Standards are also incorporated:

- 1. *All students access information efficiently and effectively*
- 2. *All students evaluate information critically and competently*
- 3. *All students use information effectively and creatively*
- 4. *All students pursue information related to personal interest*
- 5. *All students strive for excellence in information seeking and knowledge generation*
- 8. *All students practice ethical behavior in regard to information and information technology*

3. Describe the educational needs of students that the practice addresses. Document the assessment measures used to determine the extent to which the objectives of the practice have been met. Provide assessments and data to show how the practice met these needs.

This practice addresses the following **educational needs**:

- ✓ addresses diverse learning patterns/styles
- ✓ incorporates a level playing field for all students - equity for all
- ✓ engaging curriculum
- ✓ makes a connection between mathematics and the real-world
- ✓ makes a connection to other disciplines
- ✓ incorporates technology

The **student objectives** of this practice are **assessed through two rubrics**. The first rubric is evaluated by the instructor. As a team they present a portfolio that represents their work (refer to smiley face bullets). Areas of evaluation could include: research, directions, walking path, calculations/cost, time table, mathematical questionnaire. The second rubric is evaluated by the students. Each individual student completes a presentation to the class. They are evaluated for the following: time of presentation, public speaking techniques, clarity of what was learned, creativity, and clarity of their likes and dislikes,

The **instructor's objectives** are **assessed** through the completion of a **feedback sheet** by the students and from instructor and chaperones' observations. Students rank each activity on a scale of one to five and are given a comment section. Names are not required. The last year brought about an average of 4.3 (five being the highest) for the quality of the trip. Comments from all chaperones were extremely favorable.

This **practice** has been **implemented** for **three years**. It was initiated because lower level students wanted to go on a trip. The instructor planned the trip and the students answered the questions. Over the past two years students have become more involved with the development of the practice. Future goals could have instructors working together incorporating diverse disciplines; Writing, Science, History.

4. Describe how you would replicate the practice in another school and/or district.

This practice can be implemented into any school or district. A group of teachers select and visit a city or town. Historic places work better because they contain older creative buildings, which lead to more applicable math questions. The teachers develop questions related to mathematics. Questions could refer to measurements, shapes, age of buildings or people connected to the building, patterns, populations, and directions to the next building can be given on the paper for the students to follow. Once questions have been developed, the instructor introduces the project to the students. The smiley bullets in part two of this practice represent some of the activities that can be incorporated. Each teacher can expand to their own liking. Connections can also be taken into a History, Science or Writing discipline(s).